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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/598,249	08/22/2006	Jacobus Maria Antonius Van Den Eerenbeemd	NL 040214	1721

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EXAMINER	
SPAR, ILANA L	

ART UNIT	PAPER NUMBER
2629	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/598,249	VAN DEN EERENBEEMD, JACOBUS MARIA ANTON	
	Examiner	Art Unit	
	ILANA SPAR	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 August 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 August 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/21/2007*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-6 are rejected under 35 U.S.C. 102(e) as being anticipated by Ham (US Patent Publication No. 2003/0048247).

With reference to claim 1, Ham teaches a system for adaptively driving a coloured liquid crystal display (57) for displaying a sequence of images, and comprising

driving electronics (53, 54) for supplying a driving voltage for each pixel in said display (see paragraph 35, lines 1-8) and characterized in further comprising

a frame memory (61) for storing a first image of said sequence of images, which first image is presently displayed on said display (see paragraph 40, lines 6-12), and

a look-up table (62) for generating a pre-write signal for said driving electronics based on said first image in said frame memory and a subsequent image to be displayed on said display (see paragraph 40, line 6 to paragraph 41, line 3).

With reference to claim 2, Ham teaches all that is required with reference to claim 1, and further teaches that said look-up table (44, performing the same function as LUT 61 cited above) is operable to generate a pre-write signal for said driving electronics

based on a difference between pixel voltages of said first and of said subsequent image to be displayed on said display (see paragraph 14).

With reference to claim 3, Ham teaches all that is required with reference to claim 1, and further teaches

said look-up table comprising a general matrix of predefined pre-write signals (see Table 1) and

is operable to select a pre-write signal (AMdata) from said predefined pre-write signals based on pixel voltages of said first and of said subsequent image to be displayed on said display (see paragraph 46), and

is operable to communicate said predefined pre-write signals to said driving electronics (see paragraph 46).

With reference to claim 4, Ham teaches all that is required with reference to claim 1, and further teaches that said driving electronics is operable to generate a background driving voltage signal for pixels in said LCD panel after generating a driving voltage for pixels in said LCD panel in accordance with said first image (see paragraph 46).

Ham teaches that the modulated data (the pre-write signal) is applied during one subfield, with the unmodulated data of the current frame applied during the subsequent subfield. The current frame data is the second image, and therefore the first image, the previous field data, is applied during the subfield immediately preceding the modulated data. As such, the pre-write signal as taught by Ham is applied after the first image is written to the display.

With reference to claim 5, Ham teaches all that is required with reference to claim 1, and further teaches that said look-up table is adapted to generate said pre-write signal based on pixel voltages of selected pixels in said first and subsequent image (see paragraph 39, lines 7-12 and paragraph 40, line 6 to paragraph 41, line 3).

It is well known in the art for a display driver to write the data for one line of the display at a time, as is taught by Ham. Therefore, it is understood that the data which is written one line at a time is also modulated one line at a time through the frame memory and look-up table as taught by Ham.

With reference to claim 6, Ham teaches all that is required with reference to claim 5, and further teaches that said selected number of pixels comprise a line of pixels in said first and subsequent image (see paragraph 39, lines 7-12 and paragraph 40, line 6 to paragraph 41, line 3).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ham in view of Johnson et al. (US Patent No. 6,304,254).

Ham teaches all that is required with reference to claim 4, but fails to teach the grey-level in the range between 20% to 50%.

Johnson et al. teaches that said predefined pre-write signals enable said driving electronics to generate a background driving voltages for pixels in a grey-level in the range between 20% to 50% (see column 4, lines 6-11).

It would have been obvious to one of ordinary skill in the art at the time of invention that the display can transmit the background driving voltages at a level which is optimized for the particular display structure and function, and for an LCD such as the ones taught by Ham and Johnson et al., the range of approximately 20% to 50% (30% to 60%) is ideal.

6. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ham in view of Shibata et al. (US Patent Publication No. 2002/0030652).

With reference to claim 8, Ham teaches all that is required with reference to claim 1, but fails to teach that said look-up table is operable to generate a first pre-write signal for said driving electronics, when a difference between a driving voltage for a pixel of said first image and said subsequent image is negative and is operable to generate a second pre-write signal for said driving electronics, when said difference is positive.

Shibata et al. teaches that said look-up table is operable to generate a first pre-write signal for said driving electronics, when a difference between a driving voltage for

a pixel of said first image and said subsequent image is negative and is operable to generate a second pre-write signal for said driving electronics, when said difference is positive (see paragraph 50, line 9 to paragraph 51, line 9).

It would have been obvious to one of ordinary skill in the art at the time of invention that the transition from black to white is not the same as the transition from white to black, and that a display will transition more readily and quickly from a high state to a low state than vice versa, such that a different signal must be applied in order to make the transition from a low to a high level similarly to the transition form a high level to a low level.

With reference to claim 9, Ham and Shibata et al. teach all that is required with reference to claim 8, and Ham further teaches that said first pre-write signal (falling signal) enables said driving electronics to generate a driving voltage having a short time duration for said pixel and wherein said second pre-write signal (rising signal) enables said driving electronics to generate a driving voltage having a longer time duration (see paragraph 7, lines 3-5).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Takako et al. (US Patent Publication No. 2003/0058264) teaches a liquid crystal display that uses a look-up table to compare the current and previous frames to generate a pre-write signal according to claims 1-4 and 8-9.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ILANA SPAR whose telephone number is (571)270-7537. The examiner can normally be reached on Monday-Thursday 8:00-4:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (571)272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bipin Shalwala/
Supervisory Patent Examiner, Art Unit 2629

ILS